

Application No. 10/014,535  
Response dated February 1, 2006  
Reply to Office Action of November 1, 2005

Page 2 of 10

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims

##### **Claim 1 (Presently Amended)**

An encryption system comprising:

a transmitting device for modulating a data signal onto a piecewise continuous carrier signal and for transmitting the modulated signal onto with a pseudo-random signal for signalling over a transmission medium; and

a receiving device for receiving said transmitted signal from the transmission medium and for recovering the data signal by removing said pseudo-random piecewise continuous carrier signal.

##### **Claim 2 (Presently Amended)**

The system of claim 1 wherein said transmitting device further comprises:

means to generate a second modulated signal the piecewise continuous carrier signal; modulating means to modulate the data signal onto the generated carrier signal add said second modulated signal to said data signal to produce a transmitted signal; and transmitting means to send said transmitted said modulated signal over a the transmission medium.

##### **Claim 3 (Presently Amended)**

The system of claim 2 wherein said receiving device further comprises:

means to generate a third modulated receive the transmitted signal; means to generate a piecewise continuous carrier subtract said third modulated signal from said transmitted signal to produce a data output signal; and means to demodulate said received transmitted output signal, using the generated piecewise continuous carrier signal, to produce a second data output signal.

##### **Claim 4 (Presently Amended)**

The system of claim 3 wherein said second modulated signal and said third modulated signal the two piecewise continuous carrier signals are pseudo-random and opposite in amplitude.

Application No. 10/014,535  
Response dated February 1, 2006  
Reply to Office Action of November 1, 2005

Page 3 of 10

~~but otherwise identical in phase and frequency, thereby simplifying the demodulation of said data signal.~~

**Claim 5 (Presently Amended)**

The system of claim 4 wherein the parameters defining the phase, amplitude and frequency of said ~~piecewise continuous carrier signals second modulated signal and said third modulated signal are derived from~~ ~~determined in accordance with an output of a~~ ~~pseudo~~-random number generator seeded with a key, thereby increasing the difficulty of an intruder planning to intercept said transmitted signal.

**Claim 6 (Presently Amended)**

The system of claim 5 wherein said ~~pseudo~~-random number generator is identically implemented at both the ~~the transmitting and receiving devices~~ transmitter and receiver and seeded with the same key so that parameters derived from ~~both~~ ~~each~~ ~~pseudo~~-random number generator are the same and when applied to said means for generating said second modulated signal and said means for generating said third modulated signal result in the same piecewise continuous carrier signal being generated ~~at the transmitting and receiving devices~~, thereby ensuring correct reception decoding of said transmitted signal.

**Claim 7 (Presently Amended)**

The system of claim 6 wherein the length of each segment in the piecewise continuous carrier signal is defined in length the data is manipulated as a 'group of bits' and the number of bits in a 'group of bits' is a parameter and may be varied for each 'group of bits'.

**Claim 8 (Presently Amended)**

The system of claim 7 wherein said the number of bits in each group of bits parameter is derived from a second determined in accordance with an output of the ~~pseudo~~-random number generator.

**Claim 9 (Cancelled)**

**Claim 10 (Presently Amended)**

A method of encrypting data comprising the steps of:

Application No. 10/014,535  
Response dated February 1, 2006  
Reply to Office Action of November 1, 2005

Page 4 of 10

generating a piecewise continuous carrier signal;  
modulating a data signal with a pseudo-random the piecewise continuous carrier signal  
signal for signalling over a transmission medium; and  
transmitting said data the modulated signal over a transmission medium;  
receiving said data; and  
removing said pseudo-random signal.

**Claim 11 (New)**

The method of claim 10 wherein the piecewise continuous carrier signal is defined by  
parameters including a length of each continuous segment, an amplitude, a phase and a  
frequency.

**Claim 12 (New)**

The method of claim 11 wherein each of the parameters is determined in accordance with an  
output of a pseudo-random number generator.

**Claim 13 (New)**

The method of claim 10 wherein the step of modulating the data signal include performing an  
amplitude modulation.

**Claim 14 (New)**

The method of claim 10 wherein the step of modulating the data signal include performing a  
frequency modulation.

**Claim 15 (New)**

The method of claim 10 wherein the step of modulating the data signal include performing a  
frequency shift keying modulation.

**Claim 16 (New)**

The method of claim 10 further including the steps of:

receiving the transmitted signal  
generating a second piecewise continuous carrier signal; and

Application No. 10/014,535  
Response dated February 1, 2006  
Reply to Office Action of November 1, 2005

Page 5 of 10

demodulating the received signal using the second piecewise continuous carrier signal  
to recover a data output signal.

Claim 17 (New)

The method of claim 16 wherein the second piecewise continuous carrier signal is defined by  
the same parameters as the piecewise continuous carrier signal.